14:Orr & Gilks D-4 (no date) 1931 FL12 Masai FL12
Kikuyu FL10

K 146 [128] the diet without materially affecting the amounts and proportions of the protein, fat and minerals.

From this table it appears that the diet of the Kikuyu male is adequate in protein* (see discussion below p. 20), but very low in fat. It contains more than enough phosphorus but is very low in calcium and possibly low in sodium. If it be assumed that the women alternate common irio with their own dish, then their protein and fat are much as those of the men. Their phosphorus intake is also roughly similar, but their intake of calcium and sodium is much higher than that of the men. Their daily intake of calcium is over 1 gm., and must be considered to be about the optimum intake.

M 146 In contrast with this picture, the Masai diet contains a liberal supply of the mineral elements and a large excess of protein and fat, but is low in carbohydrates. It must also be low in cellulose and other indigestible residues.

(d) Physical Condition.

K M 128 *Measurements.*

In constructing the tables of physical measurements,[1] the data have been arranged in age-groups, up to and including 30 years of age. Actual ages are, of course, not known by the people themselves and, therefore, only an estimate could be made, but the factor of error will be the same with regard to both Kikuyu and Masai. The figures were arrived at as a result of questioning with reference to outstanding events.

The numbers in the different groups are given in Appendix 2 along with the detailed figures. The results are shown in convenient form in the accompanying graphs, in which they are compared with standard English measurements.

K M 141 *Height.*—A comparison of the average heights of Kikuyu and Masai males (Graph 1) of the same age, shows that the Masai grow more rapidly than the Kikuyu and reach a greater mean adult height. At their maximum about the age of 20, there is a difference of almost five inches. At the same age, Masai women (Graph 2) are three inches taller than Kikuyu women. The Masai children M 145 146 appear to grow more rapidly than English children. This may be due to the fact that their chief article of diet is milk, since it has been shown in experiments with Scottish school children that the feeding of additional milk increases the rate of growth (Orr, 1928; Leighton and Clark, 1929). The total number of Masai children measured is, however, too small to make such deductions reliable.

K M 141 *Weight.*—Graph 3 compares the rate of increase in weight of Kikuyu children from birth to thirty months of age compared with that of English and of American infants. During the first month the Kikuyu infants are about half a pound lighter than English.

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* In considering the relative adequacy of Kikuyu and Masai diets it has to be borne in mind that the biological value of the Kikuyu protein is considerably lower than that of the Masai which is derived from meat and milk.

[1] [See Appendix II, Category 116, pp. 99-100--Analysis]

This is in agreement with observations on the birth-weight of Kikuyu children by Anderson, G. V. (1929). The rate of increase in weight is roughly similar for the first ten months, but thereafter the Kikuyu increase much more slowly than English or American and are about 8 lbs. lighter at 20 months. We have no data regarding the birth-weight or rate of increase of Masai infants.

In Graph 4 the weights of Kikuyu and Masai males are compared with English standards. The Masai male is uniformly heavier than the Kikuyu, but lighter than the English. The difference between Masai and Kikuyu becomes more marked after the age of 15 years, and at the age of 20 the Masai average 23 lbs. more. The difference between Masai and Kikuyu females (Graph 5) is even greater, the Masai approximating to the English standards. The average weight of Masai women in the 21–25 age group is 27 lbs. above that of Kikuyu women. It is noteworthy that Masai of both sexes show, on the average, a decrease in both height and weight after the 25th year. A similar decrease occurs in the Kikuyu, but not until the next quinquennium. Early senility appears to be common to both tribes.

In addition to being superior in height and weight, the Masai are typically larger in the chest and smaller in the abdomen than the Kikuyu. (Appendix II, Tables V and VI.)

Strength.—Average dynamometer readings at different ages are compared in Graph 6. From the earliest age the Masai give evidence of superior strength. At the maximum the males achieve an average hand pressure of 88·8 lbs., which is 30 lbs. more than the maximum for Kikuyu males. The Kikuyu male shows a strength which, indeed, is just equal to that of the Masai women, and is only at the maximum about 10 lbs. greater than that of Kikuyu women. This evidence of inferior strength on the part of the Kikuyu, especially the male Kikuyu, is supported by what we know regarding his very low capacity for work and power of endurance. Unfortunately, we have no information as to capacity for work in the Masai.

(r) Clinical Observations—Incidence of Disease.

Signs of malnutrition and symptoms suggestive of rickets are common among Kikuyu children, the males particularly being affected. Few cases of early rickets at the typical age came to the field worker's notice, but signs of late rickets were commonly observed in this tribe. Thus, of 1,325 boys examined, 830 (63 per cent.) had some osseous deformity such as genu valgum, genu varum, flat foot, scoliosis, beading of the costochondral junctions, rickety rosary, or cranial bossing.

It is known that yaws produce bone deformities of many kinds, and it is, therefore, important to know what part of the above deformities may be attributable to yaws. There are no reliable figures showing the general incidence of yaws in children. Philip 1927, I) gives the incidence amongst school children in one district as about 15 per cent., but this figure is not applicable to the general

In the absence of further information, it can only be said that the results of this investigation suggest that susceptibility to ulcer, which appears to be general amongst natives on ill-balanced diets of the type mentioned, is correlated with a high blood inorganic phosphate, occurring with a normal, or slightly subnormal calcium, and that the actual occurrence of ulcer is associated with an exaggeration of this abnormality.

IV.—SUMMARY OF RESULTS.

Preliminary observations and a review of existing information suggested that disease is more prevalent amongst native races than is generally supposed, and indicated that the incidence of certain diseases might be correlated with diet.

A survey of two tribes, the Masai and Akikuyu, showed that the diet of the former consisted to a large extent of milk, meat and raw blood, and that of the latter mainly of cereals, roots and fruits, the bulk of the diet being cereals. The outstanding points of difference in chemical composition of the two diets were that the Masai have a relatively very high intake of protein, fat and calcium, while the Kikuyu have a high intake of carbohydrate and a low one of calcium. Differences were found in the dietary customs between men and women in both tribes, the diets of the females approaching in each case to the mean between the diets of the males.

Physical measurements showed that the full-grown Masai male is on an average, 5 inches taller and 22 lb. heavier than the full-grown male Kikuyu, and his muscular strength, as determined by the dynamometer, is 50 per cent. greater. Marked differences were found in the incidence of disease in the two tribes, bony deformities, dental caries and anæmia, pulmonary conditions and tropical ulcer being much more prevalent amongst the Akikuyu. On the other hand, intestinal stasis and rheumatoid arthritis were more common amongst the Masai.

Analyses showed that native Hospital and Prison diets are markedly deficient in calcium, the average daily intake being only about 0·3 gm. Ca, as compared with the assumed requirement of about 1 gm.

Examination of the blood of Kikuyu and other natives on a similar dietary showed that the concentration of calcium was lower than the European standard, the average of 90 cases, prisoners and farm labourers (not pathological) being 9·4 mg. per 100 c.c. serum, as compared with 10·0 to 10·5 mg. in Europeans at home, and 11·4 mg. in 13 Europeans in Kenya. The range of variation in blood calcium was wide, from 7·3 mg. to 11·7 mg., the highest figure being below the mean for Europeans in Kenya.

14:Orr & Gilks D-4 (no date) 1931 FL12 Masai FL12
Kikuyu FL10

APPENDIX II.

TABLE I.

Heights and Weights—Kikuyu and Masai Males.

Kikuyu Males.				Masai Males.			
Age.	No.	Average height. Inches.	Average weight. lbs.	No.	Average height. Inches.	Average weight. lbs.	Age.
2	4	34·6	23·4	—	—	—	2
3	12	37·7	27·3	9	38·3	29·1	3
4	23	40·6	32·4	14	39·7	33·1	4
5	34	41·7	34·3	12	41·6	36·6	5
6	36	44·4	38·2	12	43·6	41·3	6
7	34	46·5	43·5	14	46·2	51·7	7
8	40	47·3	44·8	13	48·3	52·6	8
9	40	50·4	51·1	10	53·5	59·1	9
10	35	51·9	53·9	10	53·6	61·6	10
11	79	53·4	60·6	10	55·1	66·2	11
12	91	54·3	63·0	24	56·7	69·6	12
13	63	56·9	67·7	10	57·9	74·6	13
14	58	59·5	75·7	20	60·4	83·5	14
15	63	60·4	80·2	19	63·4	94·7	15
16	66	61·7	83·6	9	65·2	107·5	16
17–18	130	63·1	103·6	17	67·2	119·2	17–18
19–20	172	64·4	110·6	22	69·6	133·3	19–20
21–25	433	64·6	114·9	80	67·6	133·7	21–25
26–30	436	64·6	114·2	70	67·7	134·6	26–30
31–40	412	64·4	109·9	166	67·4	130·5	31–40

14:Orr & Gilks D-4 (no date) 1931 FL12 Masai FL12
Kikuyu FL10

TABLE II.

Heights and Weights—Kikuyu and Masai Females.

Kikuyu Females.				Masai Females.			
Age.	No.	Average height Inches.	Average weight lbs.	No.	Average height Inches.	Average weight lbs.	Age.
2	12	35·8	23·6	—	—	—	2
3	13	36·9	26·8	6	36·0	25·7	3
4	11	38·6	31·3	6	38·7	31·3	4
5	24	42·9	35·5	9	40·5	32·6	5
6	39	45·2	41·9	17	43·6	37·9	6
7	35	46·9	43·5	13	45·8	42·5	7
8	42	47·7	46·6	12	48·5	50·1	8
9	42	49·2	48·7	18	50·0	52·2	9
10	52	50·0	53·5	14	52·9	64·4	10
11	60	52·0	57·2	17	54·1	64·4	11
12	48	53·2	62·1	11	56·2	71·3	12
13	49	54·7	66·2	9	56·9	73·1	13
14	29	56·5	72·7	8	58·8	82·6	14
15	47	57·8	78·9	9	61·5	104·6	15
16	51	58·9	85·5	11	61·8	103·0	16
17–18	254	59·4	92·1	16	62·1	114·2	17–18
19–20	397	59·7	94·1	41	62·7	119·6	19–20
21–25	441	60·2	100·6	99	62·8	127·4	21–25
26–30	188	60·2	99·9	61	61·6	117·9	26–30
31–40	100	59·7	94·2	122	61·6	113·8	31–40

TABLE III.

Average Dynamometer Records—Males.

Kikuyu Males.			Masai Males.		
Age.	No.	Dyn. record.	No.	Dyn. record.	Age.
Years.		lb.		lb.	Years.
6	17	18·2	6	22·0	6
7	47	22·5	11	29·3	7
8	82	24·4	11	27·6	8
9	96	28·0	18	35·2	9
10	94	30·0	17	36·6	10
11	79	33·0	18	40·0	11
12	91	34·1	24	40·9	12
13	59	37·9	18	46·1	13
14	56	41·6	20	52·9	14
15	63	46·0	19	58·5	15
16	80	48·2	9	60·3	16
20	100	56·1	29	66·6	20
21–25	150	58·7	90	67·7	21–25

14:Orr & Gilks D-4 (no date) 1931 FL12 Masai FL12
Kikuyu FL10

TABLE IV.

Average Dynamometer Records—Females.

Kikuyu Females.			Masai Females.		
Age.	No.	Dyn. record.	No.	Dyn. record.	Age.
Years.		lbs.		lbs.	Years.
6	24	22·3	3	22·5	6
7	35	23·1	5	19·6	7
8	34	24·6	12	24·5	8
9	40	24·3	16	28·0	9
10	50	27·2	14	33·6	10
11	61	29·5	17	34·6	11
12	49	30·5	11	39·0	12
13	48	33·7	9	36·1	13
14	31	37·3	8	42·0	14
15	46	37·8	9	49·4	15
16	49	39·1	11	45·4	16
20	92	46·0	44	56·6	20
21–25	100	49·2	94	59·1	21–25

TABLE V

Average Measurements of Chest and Abdomen in Kikuyu and Masai Males.

Kikuyu Males.				Masai Males.			
Age.	No.	Chest.	Abdomen.	No.	Chest.	Abdomen.	Age.
Years.		Inches.	Inches.		Inches.	Inches.	Years.
6	93	21·8	21·1	6	22·6	21·2	6
7	84	22·6	22·1	10	24·3	21·9	7
8	82	23·6	22·8	6	24·5	23·6	8
9	97	24·3	23·0	12	25·0	22·6	9
10	95	25·0	23·5	13	25·2	22·7	10
11	79	25·5	23·8	14	26·0	22·8	11
12	91	26·1	24·3	22	25·9	22·8	12
13	59	26·8	24·6	18	27·3	23·7	13
14	56	27·7	25·4	19	28·1	24·6	14
15	63	28·9	26·2	16	29·2	25·5	15
16	86	29·8	27·0	7	31·4	27·1	16
21–25	150	31·2	28·7	68	34·3	29·6	21–25

14:Orr & Gilks D-4 (no date) 1931 FL12 Masai FL2
Kikuyu FL10

MK 141

TABLE VI.

Average Measurements of Chest and Abdomen in Kikuyu and Masai Females

Kikuyu Females.				Masai Females.			
Age.	No.	Chest.	Abdomen.	No.	Chest.	Abdomen.	Age.
Years.		Inches.	Inches.		Inches.	Inches.	Years.
6	40	22·5	21·8	4	21·4	20·7	6
7	38	22·4	21·9	4	22·4	20·1	7
8	41	22·8	22·2	6	22·9	21·9	8
9	43	23·4	22·2	9	23·7	21·8	9
10	51	24·2	22·6	4	23·8	22·9	10
11	61	24·7	23·5	10	23·7	22·9	11
12	49	25·6	24·1	6	26·1	23·4	12
13	48	25·9	24·4	8	25·7	23·3	13
14	31	27·2	25·2	5	26·0	23·8	14
15	46	28·3	25·6	5	28·4	24·5	15
16	49	29·2	26·0	10	30·1	26·3	16
21–25	100	31·0	28·7	70	32·7	29·0	21–25

TABLE VII.

Condition of Kikuyu and Masai Children.

MK 146 149

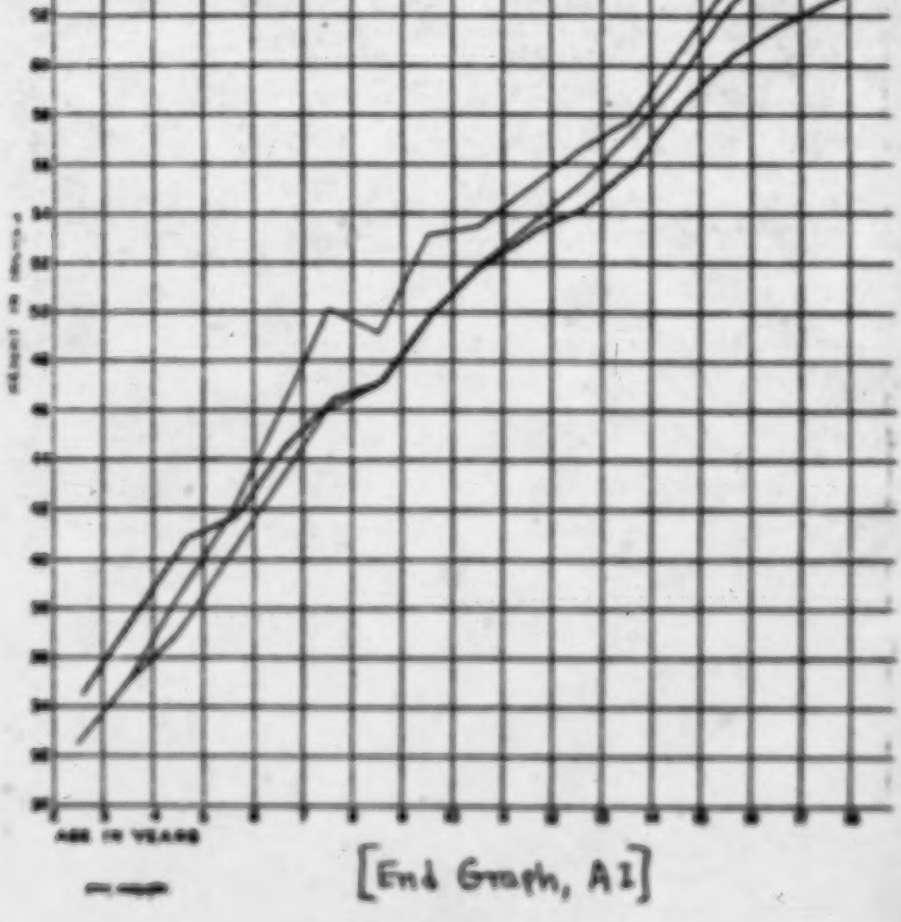
Age Group I.—Up to and including 7 years.

		Very Good.	Good.	Fair.	Poor.	Bad.	Very Bad.
Kikuyu boys—	Per cent.	7·3	16·4	32·4	29·8	12·2	1·9
No. examined 262		19	43	85	78	32	5
Kikuyu girls—	Per cent.	28·8	30	23·9	12	3·7	0·6
No. examined 347		100	104	83	45	13	2
Masai boys—	Per cent.	62·2	18·4	10·5	7·9	—	—
No. examined 38		24	7	4	3	—	—
Masai girls—	Per cent.	66·7	23·1	10·2	—	—	—
No. examined 39		26	9	4	—	—	—
Age Group II.—8–11 years.							
Kikuyu boys—	Per cent.	3·5	12·8	36·3	32·2	11·1	4·1
No. examined 634		22	81	230	204	71	26
Kikuyu girls—	Per cent.	14·7	26·1	30·9	21·1	4	1·2
No. examined 582		97	152	180	123	23	7
Masai boys—	Per cent.	47·4	26·3	15·8	10·5	—	—
No. examined 19		9	5	3	2	—	—
Masai girls—	Per cent.	46·6	26·7	16·7	6·7	3·3	—
No. examined 30		14	8	5	2	1	—
Age Group III.—12–16 years inclusive.							
Kikuyu boys—	Per cent.	9·1	17·4	35·6	24·4	10·7	2·8
No. examined 430		39	75	153	105	46	12
Kikuyu girls—	Per cent.	24·9	32·1	22·2	12·7	6·9	1·2
No. examined 345		61	81	62	31	7	3
Masai boys—	Per cent.	100	—	—	—	—	—
No. examined 3		3	—	—	—	—	—
Masai girls—	Per cent.	38·5	46·1	7·7	7·7	—	—
No. examined 13		5	6	1	1	—	—

14:Orr & Gilks D-4 (no date) 1931 FL12 Masai FL12
Kikuyu FL10

GRAPH I.

Graph showing average Heights of Masai and Kikuyu Males
population of Great Brit



[End Graph, A1]

14:Orr & Gilks D-4 (no date) 1931 FL12 Masai FL12
Kikuyu FL10

1.

u Males compared with general Male
at Britain.

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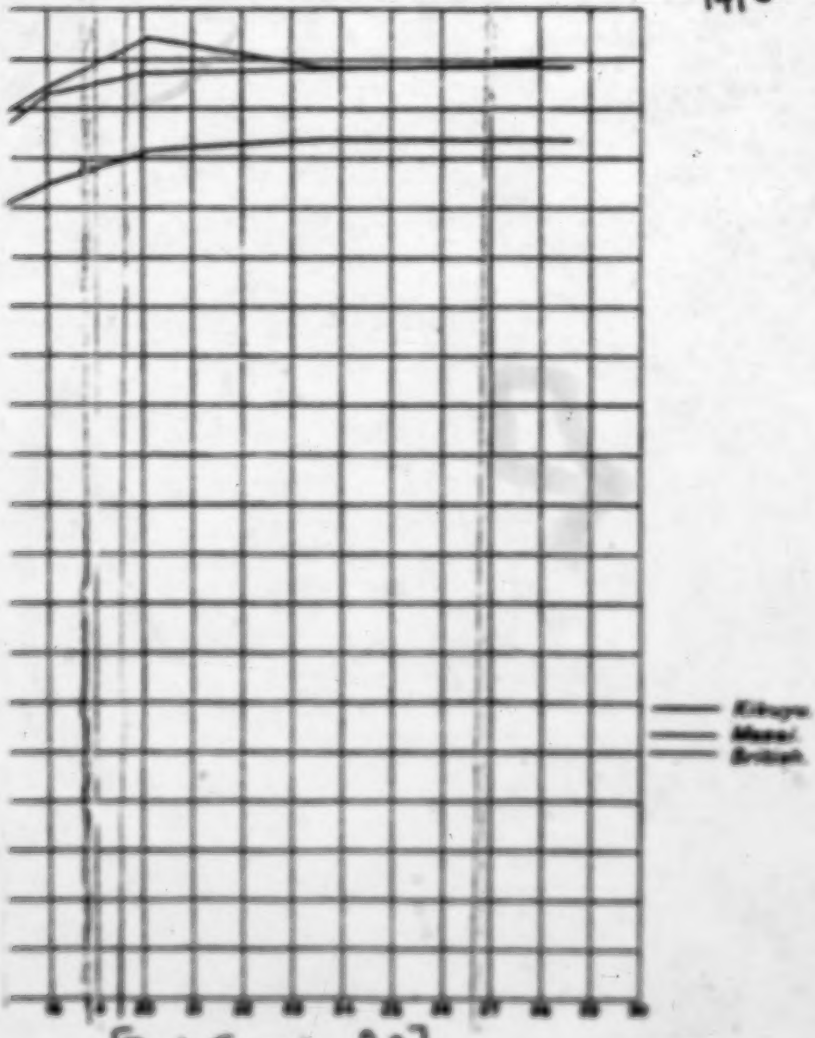
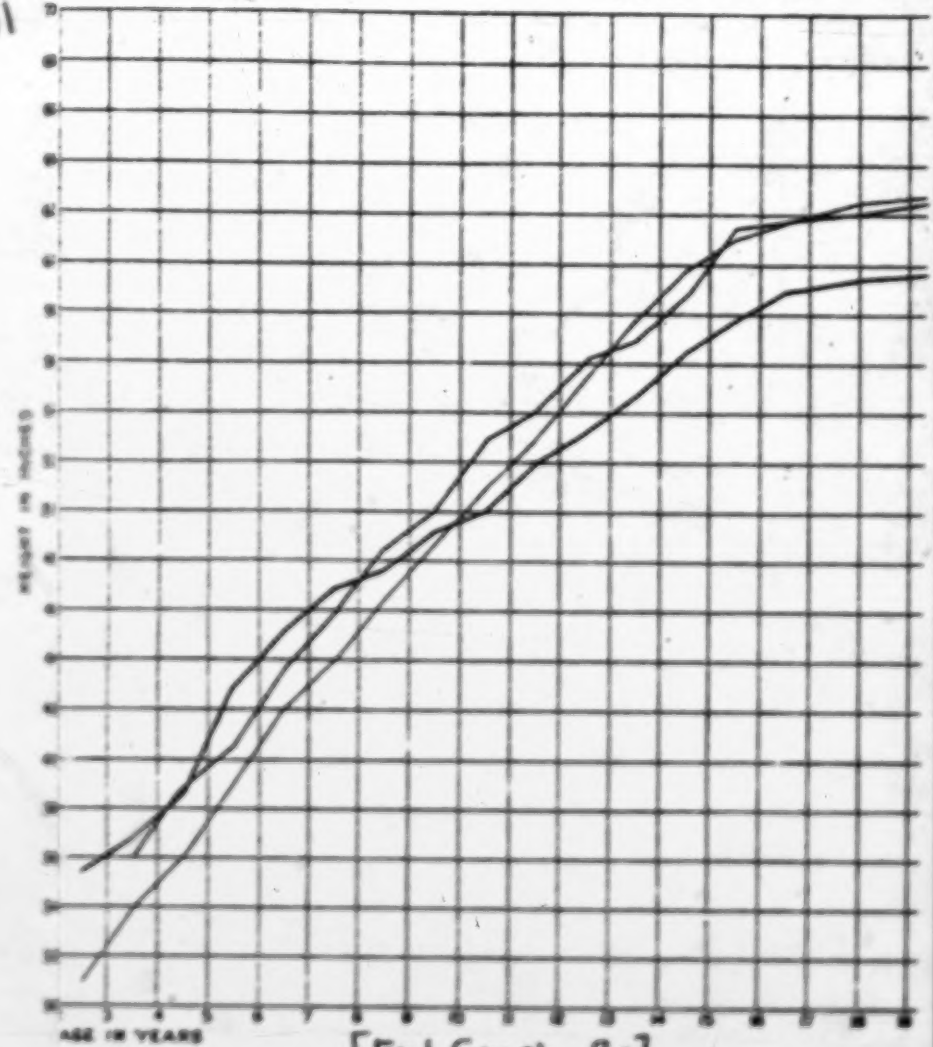


[End Graph, A2]

14:Orr & Gilks D-4 (no date) 1931 FL12 Masai FL12
Kikuyu FL10

GRAPH 2.

Graph showing average heights of Masai and Kikuyu Female population of Great Britain



[End Graph, B1]

14:Orr & Gilks D-4 (no date) 1931 FL12 Masai FL12
Kikuyu FL10

H 2.

Kikuyu Females compared with general Female
Great Britain.

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M
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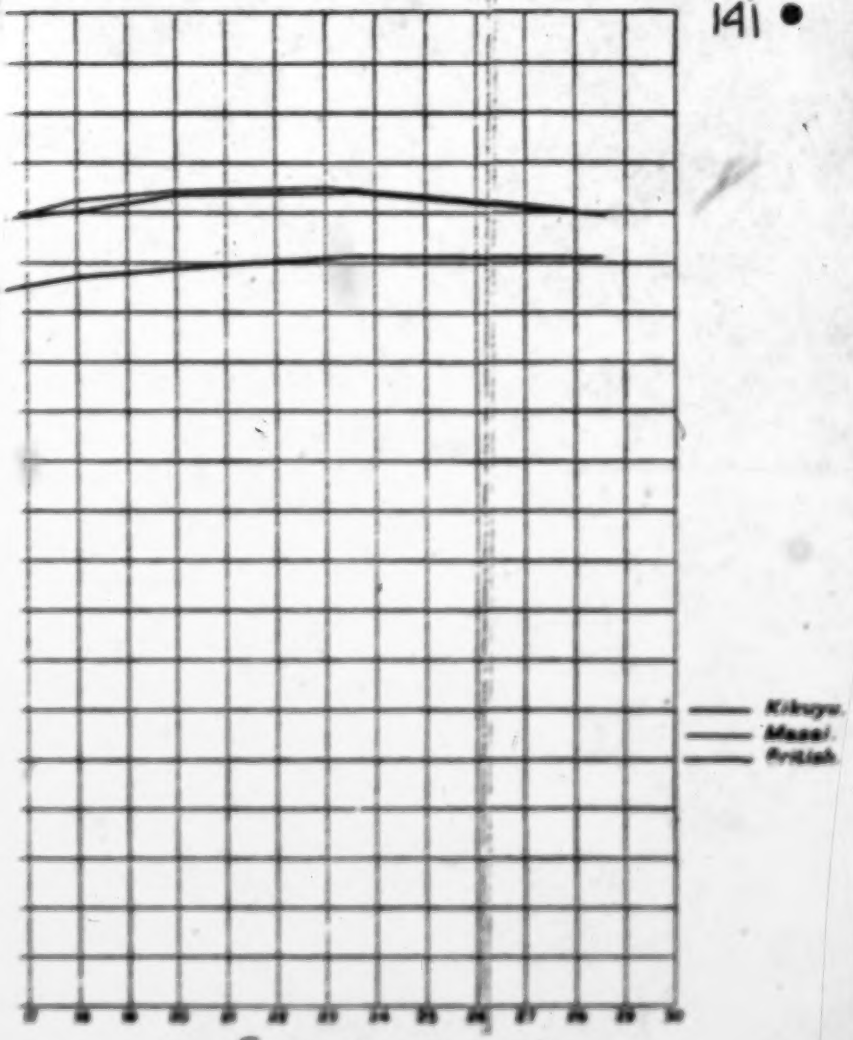


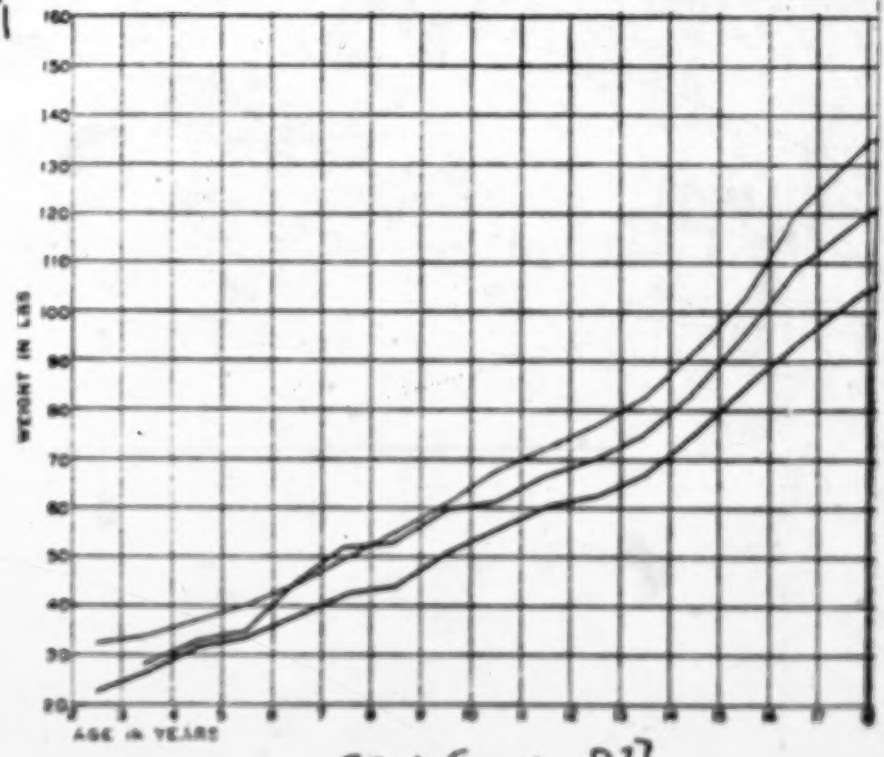
[End Graph, B2]

14:Orr & Gilks D-4 (no date) 1931 FL12 Masai FL12
Kikuyu FL10

GRAPH 4.

Graph showing average weights of Kikuyu and Masai Ma
population of Great B

K M 141



[End Graph, D1]

14:Orr & Gilks D-4 (no date) 1931 FL12 Masai FL12
Kikuyu FL10

H 4.

ssai Males compared with general Male Great Britain.

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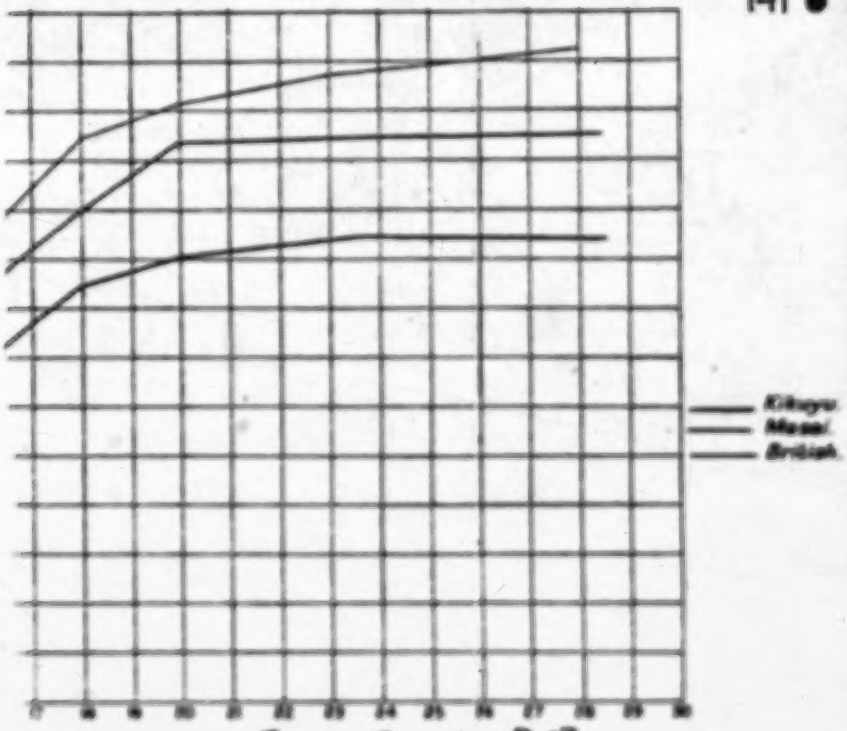
M
141

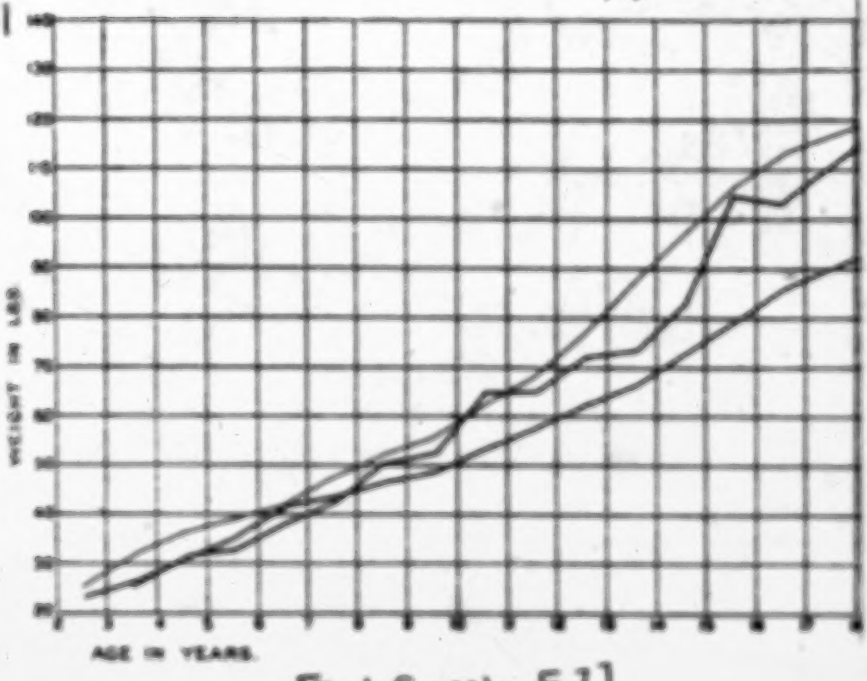


[End Graph, D2]

14:Orr & Gilks D-4 (no date) 1931 FL12 Masai FL12
Kikuyu FL10

GRAPH 5.

Graph showing average weights of Kikuyu and Masai Fe
population of Great E



[End Graph, E I]

14:Orr & Gilks D-4 (no date) 1931 FL12 Masai FL12
Kikuyu FL10

5.

: Females compared with general Female
at Britain.

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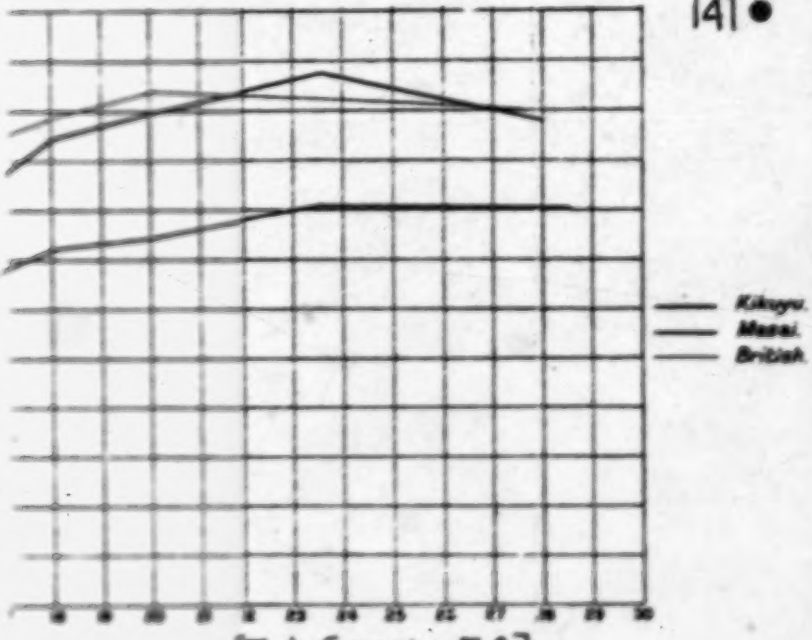

[End Graph, E2]

/432 cont./

B. Physical Measurement.

MD 141 [123]

During the taking of the measurements, the people appeared very reasonable and neither shy nor particularly awkward; I was, of course, no stranger to them, but rather an old acquaintance, who, through firm pressure of the legs of the caliper compass or beam compass, could even cause them slight pain without making them restless or anxious.

My instrument, besides the aforementioned compasses, which are part of the Bertillon case, consisted of an ordinary recruit measure and a steel measuring tape.

MD 141 128

/433/ Of the double numbers for the nipple height, the first number gives the height of the left nipple, the second one that of the right one.

Of the double numbers for the ear length, the first number shows the total length of the ear, the second one the distance from the upper ear-edge to the upper edge of the hole of the ear lobe. Where only one number is found, it gives the length of the "unbeautified," naturally formed ear.

The longitudinal circumference of the head was measured sagittally, the vertical circumference transversally.

The length of the head hair was included in the table of measurements because of its relationship to the head measurements.

The head measurements of the men Nos. 9 and 10 could not be taken precisely because of the impenetrable braid coiffure.

18: Marker--892 G-5 (1895-ca.1908) 1910 FL12 Masai FL12

/434/

No. 1.

Nos. 1 to 12, Male, Masai.

• 141

Running Number	1	2	3	4	5	6	7	8	9	10	11	12
Sex	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
Hgt. of crown	1765	1768	1673	1760	1760	1797	1669	1726	1807	1890	1811	1753
" " ear opening	1643	1630	1532	1611	1617	1653	1533	1573	1690	1651	1670	1614
" " chin edge	1560	1530	1473	1537	1540	1565	1440	1512	1603	1573	1588	1526
" " upper normal edge	1437	1437	1350	1461	1440	1468	1403	1420	1535	1464	1491	1449
Hgt. of nipple	1330	1303	1240	1303	1311	1337	1295	1300	1383	1334	1368	1336
" " navel	1065	1087	1030	1055	1057	1115	1033	1083	1105	1083	1133	1088
" " symphysis	944	957	900	966	999	995	903	900	983	940	987	936
" " patellum	856	893	834	889	910	930	843	873	904	857	911	874
" " acromion	1300	1287	1280	1278	1304	1303	1210	1207	1333	1287	1319	1278
" " elbow joint	1103	1098	1053	1130	1177	1103	1084	1107	1162	1089	1137	1102
Hgt. of xyloid process of radius	837	844	795	836	900	795	800	843	850	856	910	900
Hgt. of middle-dag. tip	830	846	813	882	900	883	809	840	895	870	908	879
" " Elbow crest	1055	1105	1014	1080	1070	1110	1034	1098	1130	1086	1141	1084
" " Elbow spine	1015	1050	980	1000	1038	1088	980	1010	1088	1030	1085	1050
" " Hg. trochanter	953	986	900	980	980	1003	903	948	1003	950	1006	968
" " Knee joint	903	918	900	889	920	913	880	899	919	889	939	900
" " Knee middle- dip	84	90	84	84	98	82	75	88	84	79	74	74
Hgt. of 7th cerv. vertebr.	1510	1498	1413	1500	1519	1535	1450	1493	1588	1533	1573	1502
" " 8th lumb. vertebr.	1100	1103	1045	1090	1145	1138	1080	1119	1130	1084	1090	1098
Breadth between acromions	290	330	307	311	320	308	330	340	365	327	369	320
Breadth between Elbow spines	180	170	170	203	180	187	203	198	235	210	224	219
Breadth between Elbow crests	241	187	245	237	274	187	230	241	238	253	280	281
Breadth between trochanters	280	253	268	234	273	280	253	273	314	293	316	298
Chest circumf.	790	810	737	790	818	810	813	808	838	784	788	787
Circumf. of thorax	900	850	825	840	840	850	790	835	830	840	840	832
" " waist	880	830	790	710	810	790	740	776	790	740	764	769
" " thigh	580	518	455	480	560	490	480	500	498	487	511	487
" " calf	348	320	330	320	330	323	320	320	320	305	334	320
Hgt. of crown above driving surface	840	850	843	820	850	803	798	807	832	828	837	823
Projection length of crotalum	194	204	190	210	213	200	190	199	200	189	198	196

/4321/

• 141

Running Number	1	2	3	4	5	6	7	8	9	10	11	12
Sex	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
Cranial breadth	143	148	147	131	147	137	140	138	143	147	141	143
Longitudinal diam. of cranium	188	181	190	185	183	183	183	183	190	188	187	194
Glabella to occipital protuberance	181	186	182	186	182	184	185	186	183	182	184	181
Basal ht. above ectgn.	138	139	136	133	136	134	138	136	137	134	133	139
Ht. of zygomatic arch	138	147	139	133	142	138	137	139	133	138	139	138
Breadth between outer orbital-edges	94	94	97	93	98	100	100	100	101	104	103	100
Breadth between outer canthi	91	95	96	91	92	91	94	93	95	97	96	94
Breadth between inner canthi	34	36	35	33	34	33	34	34	35	36	34	34
Ht. between inner canthi of zygomata	98	100	99	100	98	98	103	102	100	98	100	102
Ht. between lower jaw canthi	100	110	100	93	99	100	98	102	97	96	98	110
Distance from chin to beyrion	106	95	98	98	97	98	104	102	97	96	98	102
Distance from chin to root of nose	113	111	117	114	118	114	118	118	113	113	111	119
Distance from chin to lower limit of nose	67	67	68	67	67	67	68	68	67	67	66	68
Dist. from chin to mouth	67	67	68	67	67	67	68	68	67	67	66	68
Distance from chin to ectgn	140	140	142	135	141	140	140	138	137	138	138	144
Distance from ectgn to root of nose	113	108	111	106	111	106	111	111	111	111	111	111
Length of ear	68	68	68	68	68	68	68	68	68	68	68	68
Length of nose	68	68	68	68	68	68	68	68	68	68	68	68
Breadth of nose	68	68	68	68	68	68	68	68	68	68	68	68
" " mouth	68	68	68	68	68	68	68	68	68	68	68	68
Length of thumb	68	68	68	68	68	68	68	68	68	68	68	68
Length of mid. finger	68	68	68	68	68	68	68	68	68	68	68	68
Breadth of hand at root of fingers	68	68	68	68	68	68	68	68	68	68	68	68
Length of foot	68	68	68	68	68	68	68	68	68	68	68	68
Breadth of foot	68	68	68	68	68	68	68	68	68	68	68	68
Length. circumf. of head	68	68	68	68	68	68	68	68	68	68	68	68
Horiz. circumf. of head	68	68	68	68	68	68	68	68	68	68	68	68
Vert. circumf. of head	68	68	68	68	68	68	68	68	68	68	68	68
Fathom breadth	68	68	68	68	68	68	68	68	68	68	68	68
Body weight	68	68	68	68	68	68	68	68	68	68	68	68
Length of head hair	68	68	68	68	68	68	68	68	68	68	68	68

Abbr. = Marker, Engl-Amer = Amer Anthro/

18: Marker--324 G-S (1895-ca.1908) 1910 FLIS Mimi FLIS
Dorobo FLS
Asa

(cont)

No. 5.

No. 13, of hachured area. No. 14, of scull area. Nos. 15 to 18, B Dorobo (Asa) men.

Running Number	13	14	15	16	17	18
Sex	♂	♂	♂	♂	♂	♂
Dgr. of convx						
" " eye opening						
" " alisphenoid						
" " supra-mastoid-ridge						
" " occiput						
" " parietal						
" " zygomatic						
" " postorbital						
" " squamosal						
" " alisphenoid process of malar						
" " middle-lingual rip						
" " fiber crest						
" " fiber spine						
" " large foramen						
" " basal joint						
" " upper molar-rip						
" " Rt. carotid foramen						
" " Rt. basilar foramen						
Breadth between zygomatic						
" " fiber spine						
" " fiber crests						
" " foramen						
Outer contours						
Circumference of convx						
" " orbit						
" " length						
" " skull						
Dgr. of convx above resting surface						
Palatine length of cranium						
Cranial breadth						
Longitudinal diameter of cranium						
Diameter in occipital protuberance						
Basal breadth above origin						
Breadth of zygomatic arch						
Breadth between mast-oidal ridges						
Breadth between mast-oidal roots						

Mather—Sjö. C-5 (1895-ca. 1908) 191[illegible] FL12 Masai FL12
Dorobo FL6
Ana

1941

Remains Number	13	14	15	16	17	18
Sex	♂	♂	♂	♂	♂	♂
Breadth between inner condyles	17	19	21	19	19	19
" " lower extremity of epiphysis	18	18	19	18	18	19
Br. between lower jaw rami	18	18	19	18	18	19
Distance from chin to condyles	72	68	77	68	72	76
" " " " base of ramus	72	68	77	68	72	76
" " " " lower limit of ramus	72	68	77	68	72	76
Distance from chin to condyle	72	68	77	68	72	76
" " " " tragus	72	68	77	68	72	76
" " tragus to root of ramus	72	68	77	68	72	76
Length of ear	72	68	77	68	72	76
" " conch	72	68	77	68	72	76
Breadth of ear	72	68	77	68	72	76
" " meatus	72	68	77	68	72	76
Length of tragus	72	68	77	68	72	76
" antitragus	72	68	77	68	72	76
Breadth of tragus at root of helix	72	68	77	68	72	76
Length of eye	72	68	77	68	72	76
Breadth of eye	72	68	77	68	72	76
Length, obliquely, of hand	72	68	77	68	72	76
Width, obliquely, of hand	72	68	77	68	72	76
Foot, obliquely, of hand	72	68	77	68	72	76
Pollex breadth	72	68	77	68	72	76
Length of hand hair	72	68	77	68	72	76

/4th/ No. 5.

Nos. 1 to XIII. Women, Adult.

Running Number	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII
Sex	♀	♀	♀	♀	♀	♀	♀	♀	♀	♀	♀	♀	♀
Sign. of elbow													
" " ear opening													
" " chin edge													
" " upper													
manual edge													
Sign. of nipple													
" " apex													
" " xiphoid pt.													
" " pubescence													
" " navel													
" " elbow													
joint													
Sign. of styloid process of radius													
Sign. of acr.-clav. sp.													
" " iliac													
crest													
Sign. of iliac spine													
Sign. of large trochanter													
Sign. of knee joint													
" " knee extre-													
mity													
Sign. of lib caro. vertab.													
" " lib lumb. vertab.													
Breadth between acromions													
Breadth between iliac spines													
Breadth between iliac crests													
Breadth between trochanters													
Outer conjugate													
Circumf. of thorax													
" " acute													
" " thigh													
" " calf													
Sign. of crown above resting surface													

• 141

No. 4.

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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• [4]

Drawing Number													
Size													
Protective length of member													
Crested breadth													
Longitudinal diameter of crescent													
Distance to acceptor pinholes													
Hole to, above edge													
Breadth of symmetric axis													
Breadth between the same slotted edges													
Breadth between same ends													
Breadth between base ends													
Breadth between base ends of opposite													
Breadth between base pin centers													
Distance from ring to hole/slot													
Distance from ring to side of base													
Distance from ring to base limit of base													
Distance from ring to breadth													
Distance from ring to edge													
Distance from edge to side of base													
Length of run													
" " base													
Breadth of side " " breadth													
Length of beam " " web flange													
Breadth of base at side of flange													
Length of hub													
Breadth of face													
Length, clearance of base													
Perpendicular clearance of base													
Hole, clearance of base													
Radius breadth													
Length of beam hub													

(Feb. 6 through)

Cont'

No. 5.

Nos. XXVI to XXXIX, Women, Mami.

• 141

Drawing Number	XXXVII	XXXVIII	XXXIX	XXX	XXXI	XXXII	XXXIII	XXXIV	XXXV	XXXVI	XXXVII	XXXVIII	XXXIX
Sex	♀	♀	♀	♀	♀	♀	♀	♀	♀	♀	♀	♀	♀
Age of [illegible]													
" " [illegible]													
" " [illegible]													
[illegible]													
Age of [illegible]													
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Age of [illegible]													
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(443)

• 141

Running Number	XXVII	XXVIII	XXIX	XXX	XXXI	XXXII	XXXIII	XXXIV	XXXV	XXXVI	XXXVII	XXXVIII	XXXIX
Sex	♀	♀	♀	♀	♀	♀	♀	♀	♀	♀	♀	♀	♀
Cranial breadth	134	147	148	147	136	138	133	140	130	130	136	130	130
Longitudinal diameter of cranium	183	188	183	190	196	200	184	184	184	174	188	191	195
Glabella to occipital protuberance	166	164	154	159	153	164	159	164	163	147	154	158	153
Head breadth above wagae	115	123	125	124	120	116	114	114	117	114	116	115	120
Breadth of zygomatic arch	131	136	130	139	139	138	126	130	125	123	130	134	130
Breadth between the outer orbital-edges	107	113	104	113	111	90	100	100	105	101	100	105	108
Breadth between outer canthi	88	100	88	91	95	83	84	98	91	82	89	94	88
Breadth between inner canthi	30	30	30	36	34	30	30	36	30	27	31	30	37
Breadth between lower corners of zygomata	104	111	95	105	110	95	91	108	99	91	99	100	89
Breadth between lower-jaw corners	94	100	94	89	93	100	91	101	95	91	95	94	89
Distance from chin to hairline	183	191	184	181	182	188	189	181	173	168	179	188	174
Distance from chin to root of nose	98	101	98	108	107	103	100	103	101	98	108	108	101
Distance from chin to lower limit of nose	56	61	55	61	63	61	61	59	60	56	60	62	63
Distance from chin to mouth	39	43	39	44	46	42	43	41	43	41	39	39	41
Distance from chin to wagae	147	157	146	154	160	150	150	155	154	145	148	151	140
Distance from wagae to root of nose	105	105	111	117	111	108	108	106	101	101	107	108	114
Length of ear	61	63	58	64	60	63	64	63	62	58	61	63	61
" " nose	37	34	40	43	44	40	38	40	41	38	40	41	41
Breadth of nose	32	34	34	31	30	33	32	32	30	28	32	32	32
" " mouth	46	43	46	47	44	48	46	46	47	43	48	48	47
Length of thumb	44	44	45	45	44	48	46	44	43	39	46	45	45
" " middle finger	91	89	93	101	91	96	97	93	88	82	93	94	92
Breadth of hand at start of fingers	73	74	73	73	68	76	77	77	73	74	74	77	78
Length of foot	230	243	248	250	233	257	248	234	229	218	244	257	240
Breadth of foot	73	79	78	83	84	77	80	82	78	67	80	84	83
Longit. circumf. of head	371	379	369	370	344	390	363	361	356	340	371	379	364
Horiz. circumf. of head	358	358	350	344	338	350	348	348	343	327	352	351	345
Vert. circumf. " "	348	390	383	368	361	373	385	371	386	375	377	390	374
Fathom breadth	170	170	168	176	169	172	176	171	168	160	170	170	168
Length of head hair	—	—	—	—	—	—	—	—	—	—	—	—	—

(Fem. 9 Skulls)